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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,589	10/22/2003	James R. Broomall	WC/483	3869

7590 12/30/2004

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EXAMINER	
GILMAN, ALEXANDER	

ART UNIT	PAPER NUMBER
2833	

DATE MAILED: 12/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/689,589	BROOMALL ET AL.	
	Examiner	Art Unit	
	Alexander D Gilman	2833	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☒ Claim(s) *46-48* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14, line 6 recites "the diameter of a shield conductor".

The specification discloses (Fid. 2-4)a tubular shield conductor having an inner and outer diameters. It is unclear which these ones is claimed

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims1,- 5, 8-10,13, 24- 28, 32- 35, 44, 45 are rejected under 35 U.S.C. 102(b) as being anticipated by. Bockelman et al

With regard to claims 1, 24, Bockelman et al (US 5,561,378) disclose an adapter (apparatus) for converting single-ended coaxial signals to differential signals, comprising:

at least two coaxial interfaces (209, 210) for coupling to a coaxial device',

a first signal conductor (334) for transmitting signals through the adapter',

a second signal conductor (336) for transmitting signals through the adapter;

a shield conductor(332, 334),

a transition region for providing a transition between coaxial and differential transmission

environments and maintaining a uniform differential impedance through the transition; and

a differential interface (312, 314,316, 318)for coupling to a differential device .

With regard to claim 2, 26 Bockelman et al disclose that the transition region includes the first signal conductor, the second signal conductor and the shield conductor, having dimensions providing uniform differential impedance (col. 6, lines 29-32).

With regard to claim 3, 4, 27, 28, Bockelman et al disclose the transition region including a coupling device (a connector for connecting 231, 233 to 312-318)

With regard to claim 5, Bockelman et al disclose (Fig. 5) that the differential interface includes an air space between the first conductor and the second conductor.

With regard to claims 8, 13, 32 Bockelman et al disclose (Fig. 5) a center axis of each of the at least two coaxial interfaces is situated at an angle between 0 and 90 derees from the center axis of the differential interface.

With regard to claims 9, 33, Bockelman et al disclose the differential structure which can be used with another device for measurement with a 4-port vector network analyzer.

With regard to claims 10, 34, Bockelman et al disclose that said transition region further includes a dielectric support structure (305) at or near the transition between the coaxial and differential transmission environments.

With regard to claim 25, Bockelman et al disclose a system for converting âom single-ended coaxial signals to differential signals, comprising:

a single-ended coaxial device (208);

an adapter with at least two coaxial interfaces (209, 210)

at least two signal conductors (334, 336) for transmitting signals through the adapter;

a transition region (320) within the adapter for providing a transition between coaxial and differential transmission environments and maintaining a uniform differential impedance through the transition; and

a differential interface (314, 316) on one end of the adapter for coupling to a differential device.

With regard to claim 44, Bockelman et al disclose the structure which operates according to steps claimed.

With regard to claim 45, Bockelman et al disclose an insertable test device, comprising:
a first adapter(202) having a first differential interface; and
a second adapter (204) having a second differential interface,
wherein each of the first adapter and second adapter includes at least two coaxial interfaces (209, 210) for coupling to a coaxial device, a first signal conductor (336) for transmitting signals through the adapter, a second signal conductor (334) for transmitting sirals through the adapter, a shield conductor, and a transition region (320) for providing a transition between coaxial and differentialtransmission environments and maintaining a uniform differential impedance tllrough the transition; and the first adapter and the second adapter are mated at the first differential interface and the second differential interface.

Claims 1, 11, 25, 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Lamatsch et al .
With regard to claims 1, 25 Lamatsch et al (US 6,477,769) disclose an adapter (apparatus) for converting single-ended coaxial signals to differential signals, comprising:
at least two coaxial interfaces (the end of cable 50) opposite to end with 62/64) for coupling to a coaxial device',
a first signal conductor (50) for transmitting signals through the adapter',
a second signal conductor (50) for transmitting signals through the adapter;
a shield conductor(54),
a transition region (on a length of the cable 50 stripped portion) for providing a transition between coaxial and differential transmission
environments and maintaining a uniform differential impedance through the transition; and
a differential interface (62/64) for coupling to a differential device.
With regard to claim 11, 35, Lamatsch et al) the diameter (contraction or enlargement of the conductor cross section at contact with 62/64) and dimensions of the first conductor and second conductor vary within the transition region.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6, 7, 12, 30, 31, 36, 38-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bockelman et al in view of Bogar et al.

With regard to claims 6, 7, 30, 31, Bockelman et al disclose all of the limitations except for explicitly describing standard precision

coaxial interfaces.

Bogar et al (US 4,824,399) disclose standard precision coaxial interfaces..

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the intercace configuration of the Bockelman system , as taught by Bogar et al , to dependably connect the adaptor with the respective outputs of the network analyzer.

With regard to claims 12, 36, Bockelman et al when modified by Bogar et al disclose (Bogar) dielectric beads (33) for supporting the first signal conductor and the second signal conductor.

With regard to claims 38-43, Bockelman et al when modified by Bogar et al disclose the structure which operates according to steps claimed.

Claims 9, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bockelman et al in view of Bogar et al.

Bockelman et al disclose all of the limitations except for explicitly describing standard precision coaxial interfaces.

Bogar et al disclose standard precision coaxial interfaces..

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the intercace configuration of the Bockelman system , as taught by Bogar et al , to dependably connect the adaptor with the respective outputs of the network analyzer.

Claims 14-17, 19, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henry et al

With regard to claims 14-17, 19, 23, Henry et al (US 5,127,843) disclose an interface apparatus, comprising:

a first (7) differential signal conductor;

a second (7) differential siral conductor; and

a shield conductor (16),

Henry et al do not explicitly disclose that one of the diameters of the shield conductor is substantially equal to four times the diameter of the first differential signal conductor, as well as other geometrical relationships indisposition of the signal and shield conductors.

The above mentioned limitations are not patentably significant since they relate to the size of the article under consideration which is not ordinarily a matter of invention. In re Yount, 36 C.C.P.A. (Patents) 775, 171 F.2d 317, 80 USPQ 141.

The specified gometrical relationships are predetermined by the respective relationships of the device and adapter being used with. As for differential adaptor, that relationships can be evaluated as function of a desired impedance

Applicants have presented no argument which convinces that the particular configuration of the fixed assembly is significant or is anything more than one of numerous configurations a person of ordinary skill in the art would find obvious for purpose of connecting devices with different output geometries. In re Dailey, 149 USPQ 47 (CCPA 1976).

Claims 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henry et al in view of Buchter et al

Henry et al do not disclose hermaphroditic pin and socket contacts.

Buchter et al (US 5,890,922) disclose hermaphroditic pin (46) and socket (56) contacts.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the intercace configuration of the Henry et al connector , as taught by Buchter et al , if the respective output of the device has hermaphroditic configuration .

Claims 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henry et al in view of Tafoya et al.

Henry et al do not disclose an alignment hole and pin.

Tafoya et al (US 6,802,722) disclose an alignment hole and pin (124).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the intercace configuration of the Henry et al connector , as taught by Tafoya et al, align mating connectors.

Allowable Subject Matter

Claims 46-48 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

No prior art has been found to anticipate or render obvious the presently claimed subject matter. Specifically, none of the prior art of record discloses the combination of the limitations presented including the specified S- parameter data of low level of reflection, minimal mode conversion by reflection, and minimal mode conversion during transmission for claimed mated pair of the differential adapters.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander D Gilman whose telephone number is 571 272-2004. The examiner can normally be reached on Monday-Friday, 10:30 a.m. - 8:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on 571 272-2800 ext. 33. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

12/23/2004

Alex Gilman

ALEXANDER GILMAN
PRIMARY EXAMINER